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Claims

[c1] A method for plastic injection molding comprising:
providing a mold cavity to form a plastic molded part with a predetermined surface area;
injecting a quantity of plastic material into said mold cavity;
reducing the cross section of the mold cavity at least at 50% of the surface area;
allowing the plastic material to cool in the mold cavity; and
ejecting the molded part from the mold cavity,
wherein the molded part has thin walled sections at least at 50% of its surface area.

[c2] The method as described in claim 1 wherein said cross-section of the mold cavity is reduced by movement of a piston member in the mold cavity.

[c3] The method as described in claim 1 wherein said cross-section is reduced at least 75% of the surface area.

[c4] The method as described in claim 1 wherein the quantity of plastic material injected into the mold cavity is less than the full amount to fill the mold cavity.

[c5] The method as described in claim 4 wherein said step of reducing the cross section of the mold cavity operates to completely fill the mold cavity with plastic material.

[c6] The method as described in claim 1 wherein said cross-section of the mold cavity is reduced by movement of at least two piston members in the mold cavity.

[c7] The method as described in claim 6 wherein said at least two piston members are positioned in the same side of the mold cavity.

[c8] The method as described in claim 6 wherein at least two of said piston members are positioned opposed to one another in said mold cavity.

[c9] The method as described in claim 1 further comprising the step of ejecting the molded part comprises opening the mold and removing the molded part.

[c10] The method as described in claim 1 in which the cross-section of the mold cavity is reduced to provide a molded plastic part with a wall thickness of less than about 3 mm in the reduced cross-section areas.

[c11] The method as described in claim 10 wherein the wall thickness is reduced to about 2.5 mm.

[c12] A method for the formation of plastic molded parts having thin wall sections over at least 50% of the surface area of the parts, said method comprising:
providing a mold with a mold cavity;
providing at least one moveable member in said mold, said moveable member being positioned to reduce the volume of the mold cavity;
injecting a quantity of plastic material into the mold cavity; and
actuating the moveable member to reduce the volume of the mold cavity to form thin wall sections in the molded part.

[c13] The method as described in claim 12 further comprising the steps of allowing the plastic material to cool, opening the mold, and removing the plastic molded part from the mold cavity.

[c14] The method as described in claim 12 wherein said quantity of plastic material is less than an amount necessary to completely fill the mold cavity.

[c15] The method as described in claim 12 wherein the volume of the mold cavity is reduced to form wall sections in the molded part of less than about 3 mm.

[c16] The method as described in claim 15 wherein the wall

section are about 2.5 mm in thickness.

[c17] A system for injection molding a plastic part comprising:
a mold with a mold cavity;
at least one moveable member situated in said mold and positioned to reduce the volume of the mold cavity.

[c18] The system as described in claim 17 wherein said moveable member is actuated by a system from the group consisting of electronic, hydraulic and pneumatic.

[c19] The system as described in claim 17 wherein at least two moveable members are provided in said mold and utilized to reduce the volume of the mold cavity.

[c20] The system as described in claim 17 wherein the plastic part to be injection molded has a large surface area and the reducing of the volume of the mold cavity reduces the thickness of the walls of the plastic part over 50% of the surface area.